

NOTES:

1. AN APPROVED BACK FLOW ASSEMBLY SHALL BE INSTALLED BETWEEN THE NEW AND EXISTING WATERLINES DURING DISINFECTION AND FLUSHING OF NEW WATER MAIN.
2. THE BACK FLOW PREVENTION ASSEMBLY AND SUPPLY HOSE MUST BE DISCONNECTED DURING HYDROSTATIC PRESSURE TESTING OF THE NEW MAIN.
3. THE NEW WATER MAIN SHALL BE CONNECTED TO THE EXISTING SYSTEM ONLY AFTER THE NEW MAIN IS FLUSHED, DISINFECTED AND SATISFACTORY BACTERIOLOGICAL SAMPLE RESULTS ARE OBTAINED.
4. THE INTERIORS OF ALL PIPES AND FITTINGS TO BE USED IN FINAL CONNECTION MUST BE SWABBED OR SPRAYED WITH A 1% AVAILABLE CHLORINE SOLUTION.
5. 2" HYDRANT METER SHALL BE OBTAINED FROM THE CITY OF WENATCHEE PUBLIC WORKS DEPARTMENT OR CHELAN COUNTY PUD HYDRANT VALVE MAY BE USED UNDER SOME CIRCUMSTANCES.
6. DECHLORINATOR REQUIRED, CONTRACTOR MAY FLUSH TO SEWER OR STORM AFTER USING DECHLORINATOR. NOTIFY WENATCHEE WASTE WATER TREATMENT PLANT PRIOR TO FLUSH AIR GAP AT DISCHARGE.

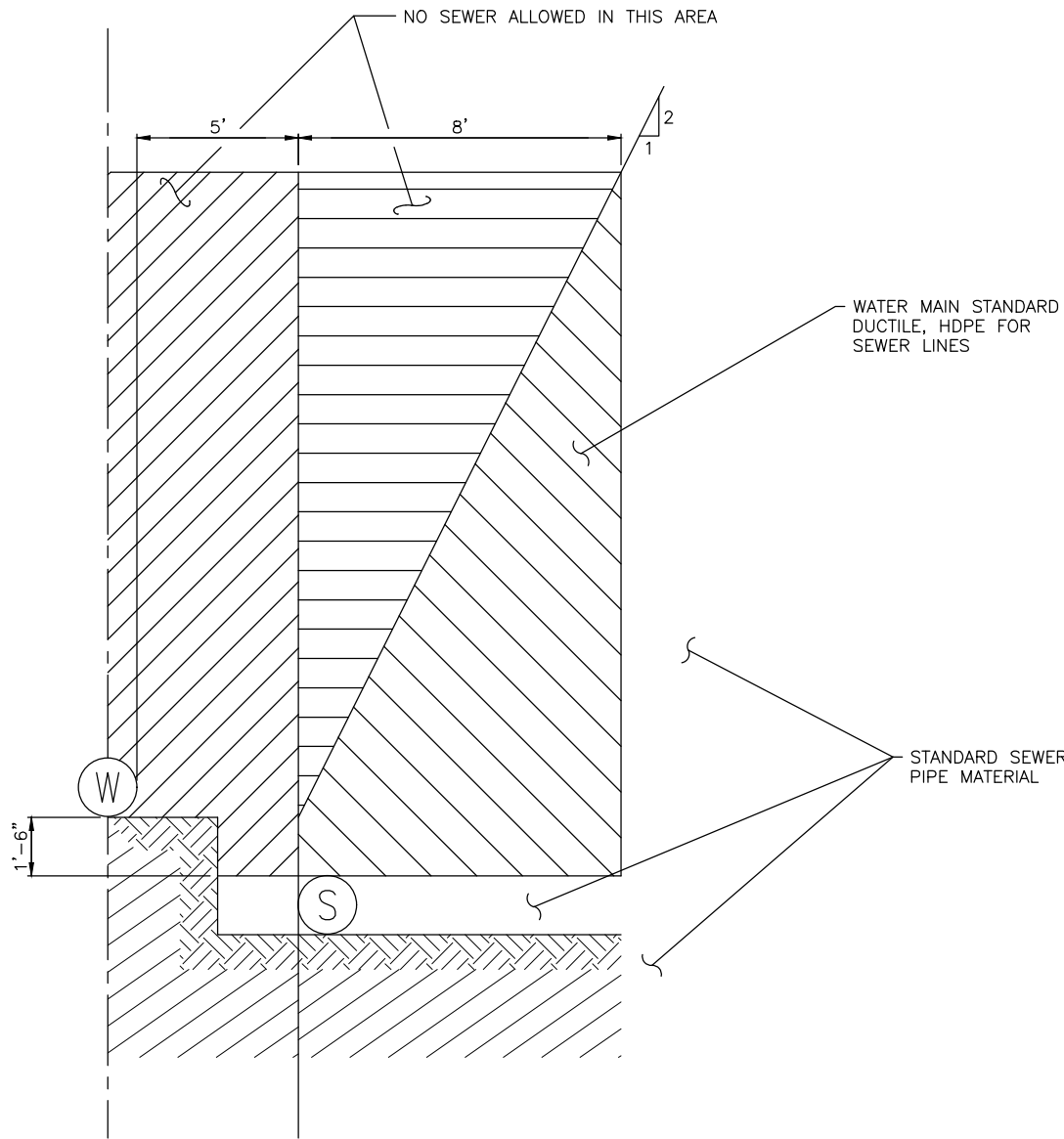
STANDARD DETAIL

FILLING NEW

WATER MAINS



SCALE: AS SHOWN	DATE DRAWN		REVISIONS	
	11/04/2020		DATE	INITIAL
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APPROVED BY		DATE APPROVED		
STANDARD SPECIFICATIONS				
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PARALLEL CONSTRUCTION

WATER MAIN STANDARD PIPE MATERIAL

AWWA STANDARD			
TYPE OF PIPE	PIPE	JOINT	FITTINGS
DUCTILE IRON	C 1.52	C 111	C 110
CONCRETE CYLINDER	C 303		

NOTES:

1. HORIZONTAL SEPARATION (PARALLEL) – A MINIMUM HORIZONTAL SEPARATION OF TEN (10) FEET BETWEEN GRAVITY SANITARY SEWERS AND ANY POTABLE WATER LINES SHALL BE MAINTAINED, WHENEVER POSSIBLE. THE DISTANCE SHALL BE MEASURED FROM EDGE TO EDGE.
2. UNUSUAL CONDITIONS (PARALLEL) – WHEN LOCAL CONDITIONS PREVENT A HORIZONTAL SEPARATION AS DESCRIBED ABOVE, A GRAVITY SEWER LINE MAY BE LAID CLOSER THAN TEN (10) FEET TO A WATER LINE PROVIDED:

A)IT IS LAID IN A SEPARATE TRENCH; OR IT IS LAID IN THE SAME TRENCH WITH THE WATER LINE THAT IS LOCATED AT ONE SIDE ON A BENCH OF UNDISTURBED EARTH; AND

B)IN EITHER CASE, THE ELEVATION OF THE CROWN OF THE GRAVITY SEWER MUST BE AT LEAST 18 INCHES BELOW THE INVERT OF THE WATER LINE. WHEN THIS VERTICAL SEPARATION CANNOT BE OBTAINED, THE GRAVITY SEWER SHALL BE CONSTRUCTED OF MATERIALS AND JOINTS THAT ARE 8 EQUIVALENT TO WATER MAIN STANDARDS OF CONSTRUCTION AND SHALL BE PRESSURE TESTED TO ASSURE WATER TIGHTNESS PRIOR TO BACKFILLING.
3. VERTICAL SEPARATION (PERPENDICULAR) – SEWER LINES CROSSING WATER LINES SHALL BE LAID BELOW THE WATER LINES TO PROVIDE A SEPARATION OF AT LEAST 18 INCHES BETWEEN THE INVERT OF THE WATER LINE AND THE CROWN OF THE SEWER LINE, WHENEVER POSSIBLE.
4. UNUSUAL CONDITIONS (PERPENDICULAR) – WHEN LOCAL CONDITIONS PREVENT A VERTICAL SEPARATION AS DESCRIBED ABOVE, THE FOLLOWING CONSTRUCTION SHALL BE USED:

A)GRAVITY SEWERS PASSING OVER OR UNDER WATER LINES SHALL BE:

I. CONSTRUCTED OF MATERIAL DESCRIBED ON THIS PAGE. THE ONE SEGMENT OF THE MAXIMUM STANDARD LENGTH OF PIPE (BUT NO LESS THAN 18 FEET LONG) SHALL BE USED WITH THE PIPES CENTERED TO MAXIMIZE JOINT SEPARATION; OR

II. CONSTRUCTED OF STANDARD GRAVITY SEWER MATERIAL ENCASED IN CONCRETE OR IN A 1/4" THICK CONTINUOUS STEEL CASING WITH ALL VOIDS PRESSURE-GROUTED WITH SAND-CEMENT GROUT.

III. THE LENGTH OF THE SEWER PIPE, IN BOTH I. AND II. ABOVE, SHALL BE CENTERED AT THE POINT OF CROSSING SO THAT THE JOINTS WILL BE EQUIDISTANT AND AS FAR AS POSSIBLE FROM THE WATER LINE. THE SEWER PIPE SHALL BE THE LONGEST STANDARD LENGTH AVAILABLE FROM THE MANUFACTURER.

B)WATER LINES PASSING UNDER GRAVITY SEWERS, IN ADDITION, SHALL BE PROTECTED BY PROVIDING:

I. A VERTICAL SEPARATION OF AT LEAST 18 INCHES BETWEEN THE INVERT OF THE SEWER AND THE CROWN OF THE WATER LINE;

II. ADEQUATE STRUCTURAL SUPPORT FOR THE SEWERS TO PREVENT EXCESSIVE DEFLECTION OF JOINTS AND SETTLING ON AND BREAKING OF THE WATER LINES; AND

III. THE LENGTH OF THE SEWER PIPE SHALL BE CENTERED AT THE POINT OF CROSSING SO THAT THE JOINTS WILL BE EQUIDISTANT AND AS FAR AS POSSIBLE FROM THE WATER LINE. THE SEWER PIPE SHALL BE THE LONGEST STANDARD LENGTH AVAILABLE FROM THE MANUFACTURER.

C)PRESSURE SEWERS SHALL ONLY BE CONSTRUCTED UNDER WATER LINES WITH DUCTILE IRON PIPE OR STANDARD SEWER PIPE IN A STEEL CASING FOR A DISTANCE OF AT LEAST TEN (10) FEET ON EACH SIDE OF THE CROSSING.

STANDARD DETAIL
WATER AND SEWER
SPACING & CLEARANCE

SCALE: AS SHOWN	DATE DRAWN		DATE		REVISIONS		DESIGNED	DRAWN	APPROVED BY	STANDARD SPECIFICATIONS
	12/04/2020	CHECKED	01/22	INITIAL	A/S					

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	DESIGNED	DRAWN JB	DATE	INITIAL		
	APPROVED BY	SK	12/20/2017	JBV		
			10/27/2020	CJW		
			01/01/2022	AJS		
STANDARD SPECIFICATIONS						

DETAIL NO.

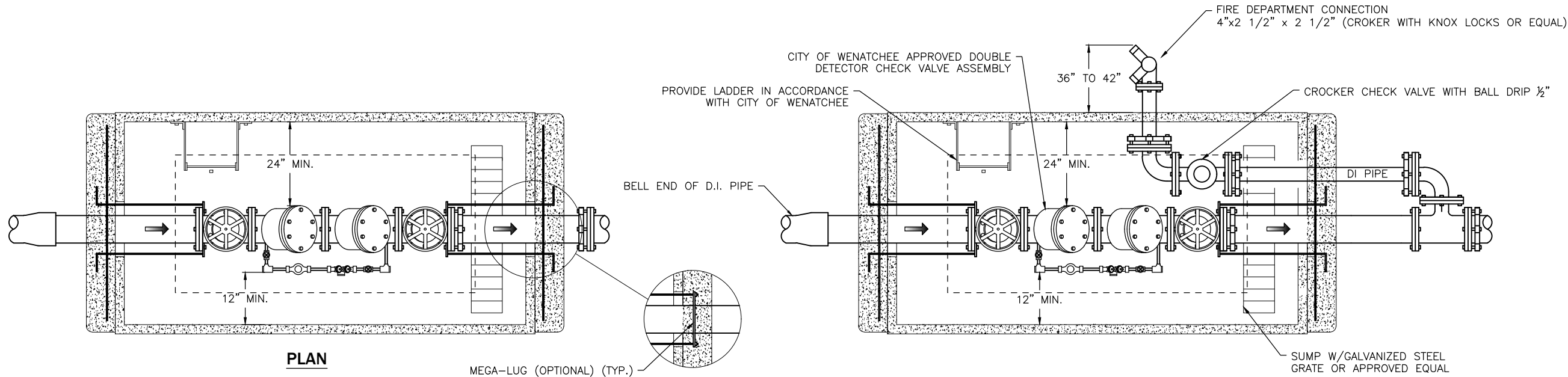
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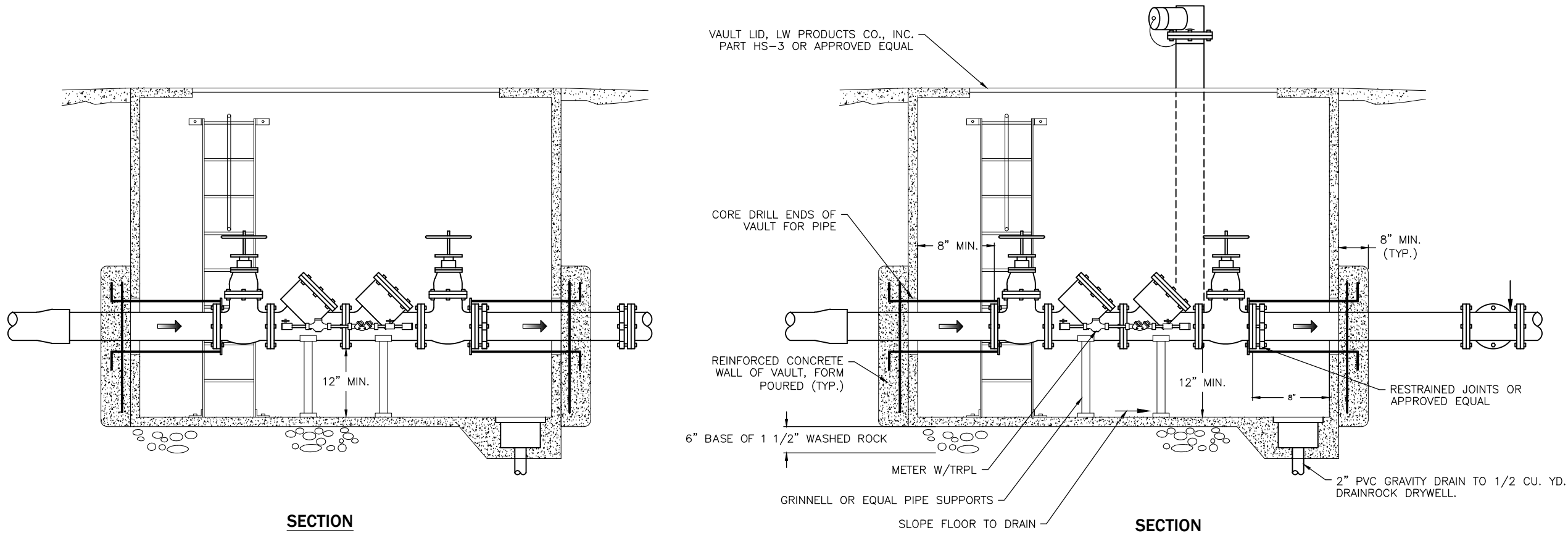
NOTES:

1. COVER SHALL NOT EXTEND MORE THAN 2" ABOVE GRADE WHEN VAULT IS NOT IN TRAFFIC AREA.
2. SLOPE PAVEMENT AWAY FROM COVER.
3. VAULT LID SHALL BE OF ADEQUATE HEIGHT TO PROVIDE MIN. 6" CLEARANCE TO O, S & Y VALVE WHEN VALVE IS FULLY OPEN.
4. 5/8" BY-PASS METER SHALL BE SENSUS SR II OR NEPTUNE T-10.
5. VAULTS SHALL BE AS MANUFACTURED BY UTILITY VAULT OR APPROVED EQUAL AND SHALL BE STRUCTURALLY DESIGNED FOR THE PROPOSED INSTALLATION.
6. BACK-FLOW VALVE AND ASSEMBLY MUST APPEAR ON CURRENT DEPT. OF HEALTH'S APPROVED VALVE LISTING.
7. ASSEMBLY SHALL BE MAINTAINED BY OWNER WITH A TEST DONE UPON INSTALLATION AND ANNUALLY THEREAFTER BY A CERTIFIED BACK-FLOW ASSEMBLY TESTER (BAT.) A COPY OF EACH ANNUAL TEST REPORT MUST BE SENT TO THE CITY OF WENATCHEE.
8. WATER MAIN SHALL NOT BE PLACED IN SERVICE UNTIL AFTER DOUBLE CHECK DETECTOR ASSEMBLY IS INSPECTED. TESTED AND APPROVED BY CITY REPRESENTATIVE.
9. RESTRAIN CHECK DETECTOR WITH MEGA-LUGS. RESTRAINED JOINT PIPE, OR SHACKLE RODS BACK TO WATER MAIN AS REQUIRED.

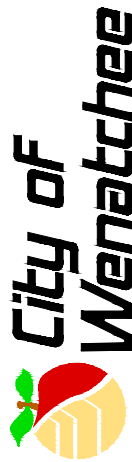


SHOWN WITHOUT FIRE DEPARTMENT CONNECTION.
WHEN FDC IS AT ANOTHER LOCATION

THIS DCDA VAULT SERVES A SINGLE BUILDING AND
THE VAULT IS LOCATED ADJACENT TO THE RIGHT
OF WAY WHERE A FIRE HYDRANT IS NEARBY.

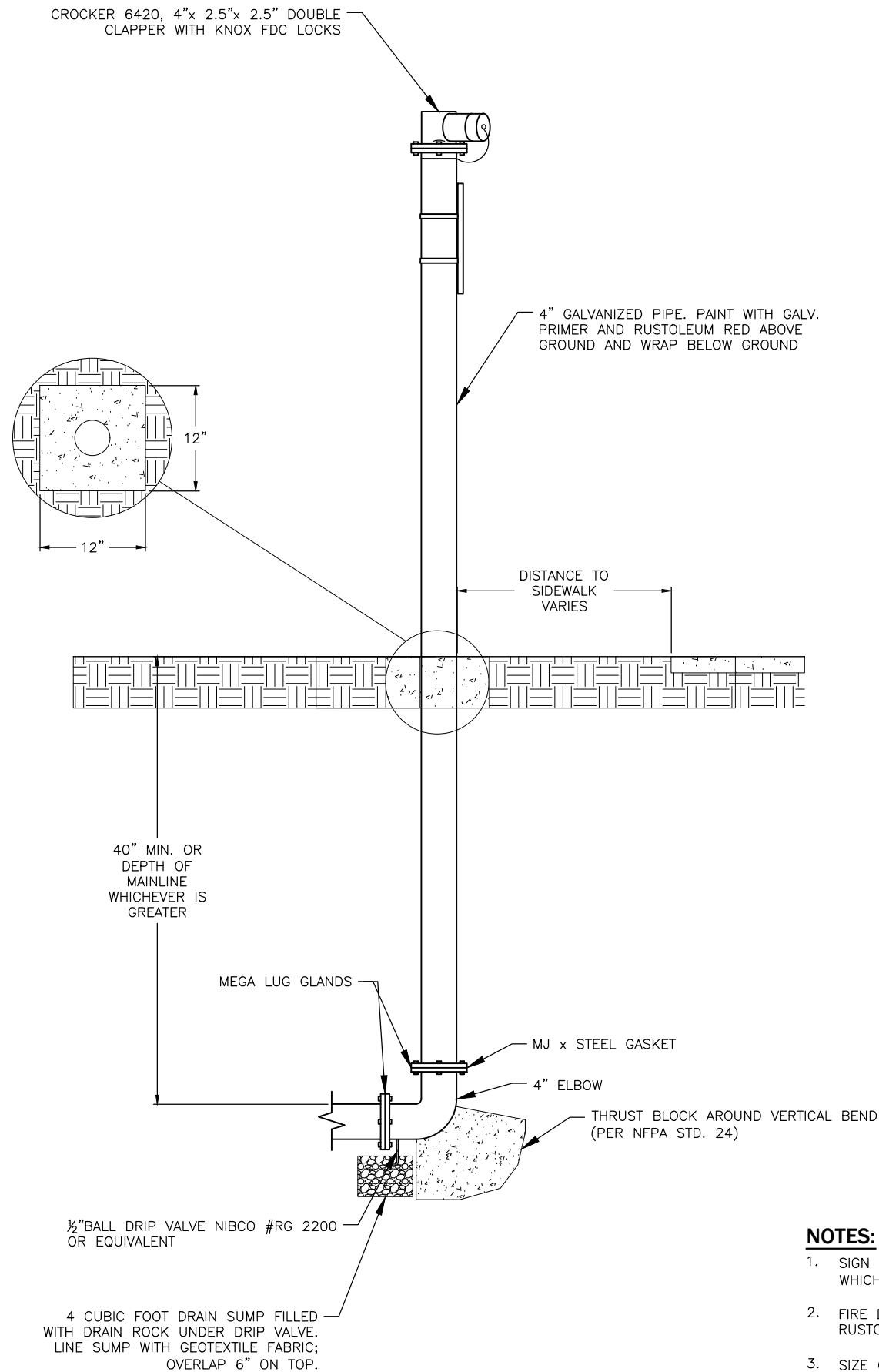
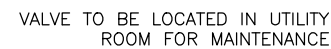
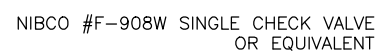
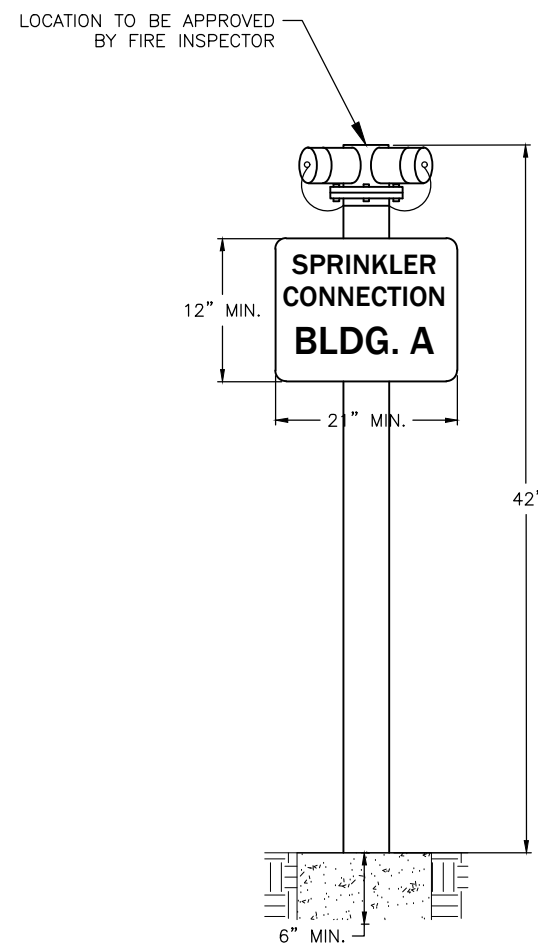


STANDARD DETAIL
FIRE SERVICE
DCDA CONNECTION



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AS SHOWN	3/23/2015						DMN	DMN	02/20	CAW
							RDH		01/22	AJS

STANDARD SPECIFICATIONS
6-02 CONCRETE STRUCTURES
7-09 WATER MAINS
7-12 VALVES FOR WATER MAINS
7-15 SERVICE CONNECTIONS



STANDARD DETAIL

FIRE SERVICE

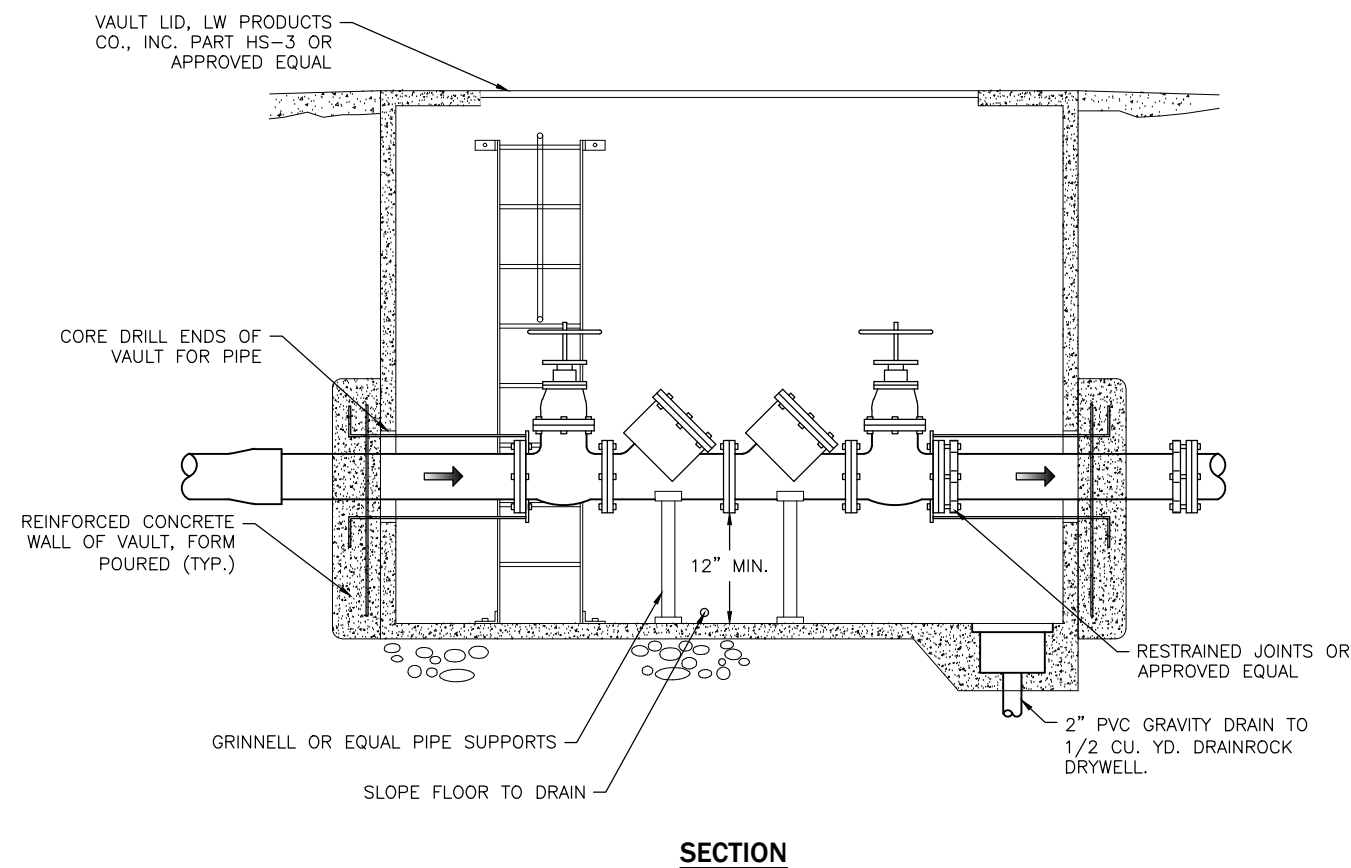
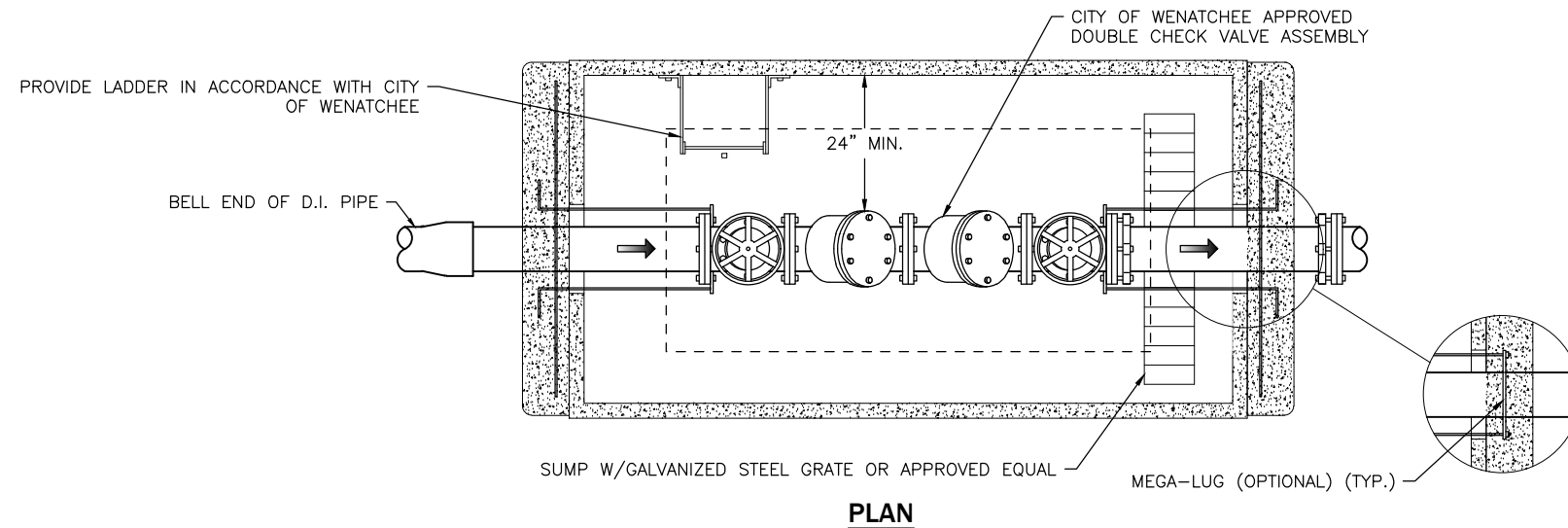
STANDALONE FDC



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		DMN	01/22	AJS
		DATE APPROVED		
STANDARD SPECIFICATIONS				
6-02 CONCRETE STRUCTURES				
7-09 WATER MAINS				
7-12 VALVES FOR WATER MAINS				

NOTES:

1. TYPICAL LOCATION IS AT OR NEAR THE PROPERTY LINE, AT BACK OF WATER METER CHAMBER.
2. COVER SHALL NOT EXTEND MORE THAN 2" ABOVE GRADE WHEN VAULT IS NOT IN TRAFFIC AREA.
3. SLOPE PAVEMENT AWAY FROM COVER.
4. VAULT LID SHALL BE OF ADEQUATE HEIGHT TO PROVIDE MIN. 6" CLEARANCE TO O, S & Y VALUE WHEN VALVE IS FULLY OPEN.
5. VAULTS SHALL BE AS MANUFACTURED BY UTILITY VAULT OR APPROVED EQUAL AND SHALL BE STRUCTURALLY DESIGNED FOR THE PROPOSED INSTALLATION.
6. BACK-FLOW VALVE AND ASSEMBLY MUST APPEAR ON CURRENT DEPT. OF HEALTH'S APPROVED VALVE LISTING.
7. RESTRAIN CHECK DETECTOR WITH MEGA-LUGS, RESTRAINED JOINT PIPE, OR SHACKLE RODS BACK TO WATER MAIN AS REQUIRED.
8. BOTTOMLESS VAULTS MUST PROVIDE CONCRETE SUPPORT FOUNDATIONS FOR PIPE SUPPORTS.
9. ASSEMBLY SHALL BE MAINTAINED BY OWNER WITH A TEST DONE UPON INSTALLATION AND ANNUALLY THEREAFTER BY A CERTIFIED BACK-FLOW ASSEMBLY TESTER (BAT.) A COPY OF EACH ANNUAL TEST REPORT MUST BE SENT TO THE CITY OF WENATCHEE.
10. WATER SERVICE SHALL NOT BE PLACED IN SERVICE UNTIL AFTER DOUBLE CHECK DETECTOR ASSEMBLY IS INSPECTED, TESTED AND APPROVED BY CITY REPRESENTATIVE.
11. ACCOUNT FOR THERMAL EXPANSION WITHIN THE PREMISES.
12. AN ALTERNATE LOCATION MAY BE ALLOWED BY THE WATER PURVEYOR.



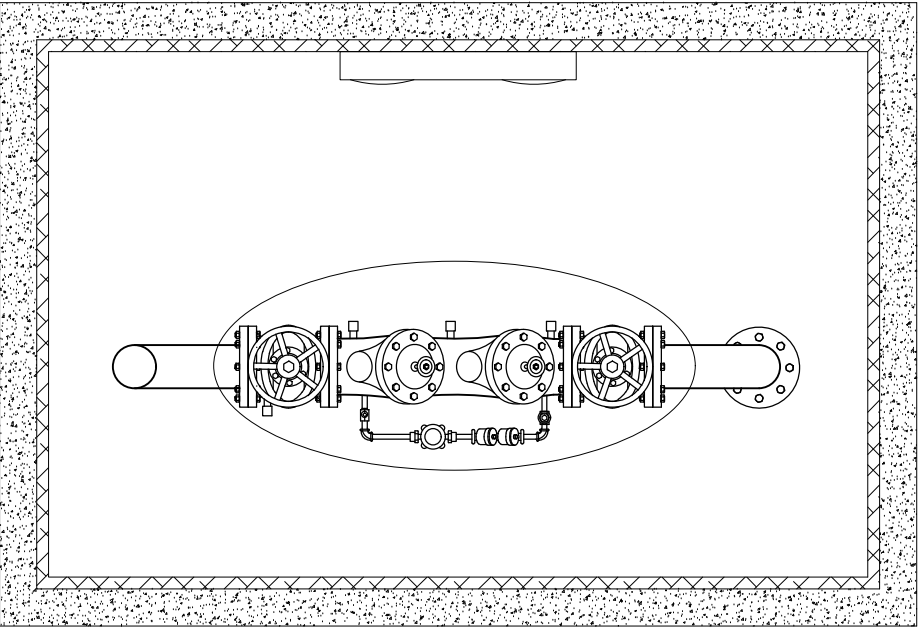
STANDARD DETAIL

DOUBLE CHECK VALVE

PREMISES ISOLATION



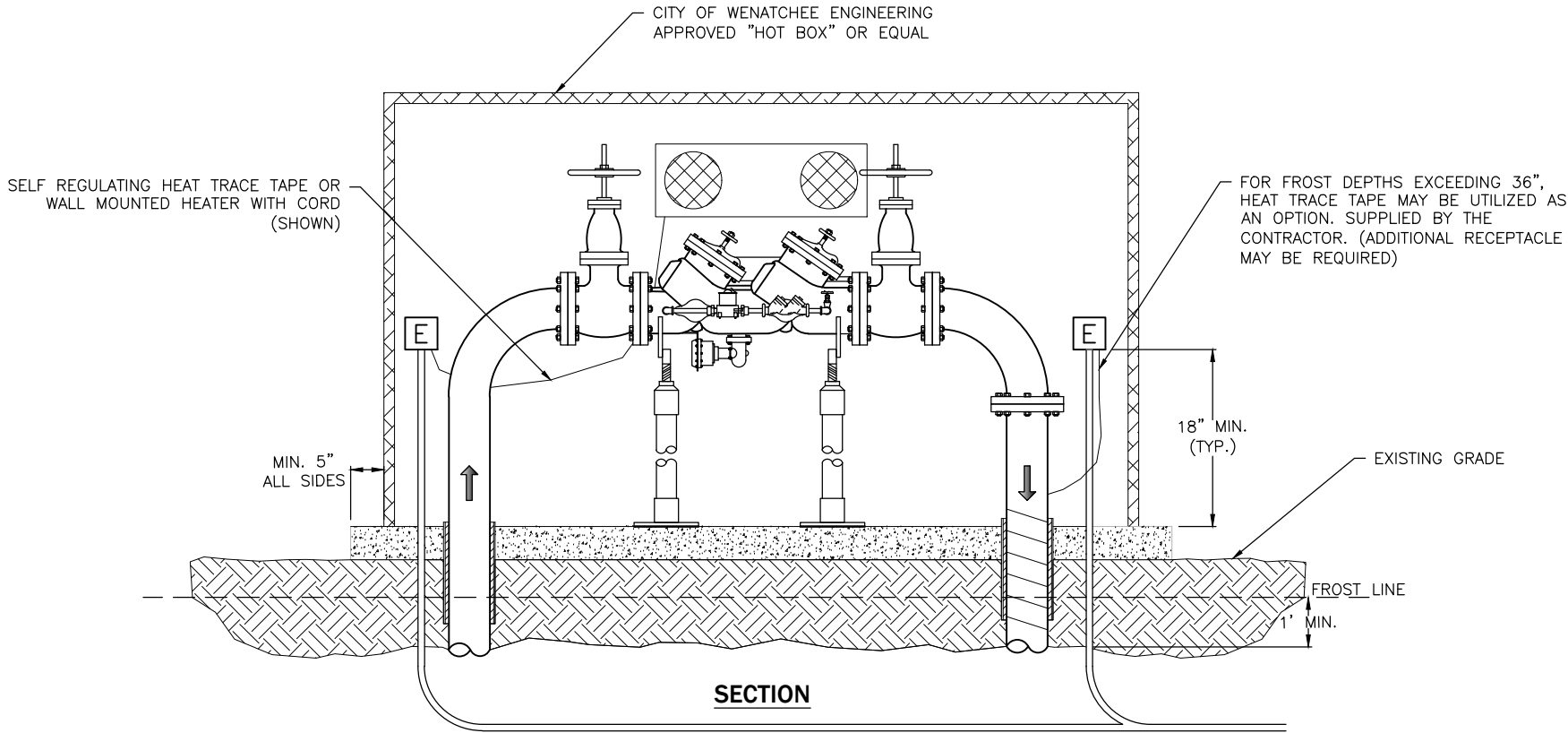
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				STANDARD SPECIFICATIONS					
				6-02 CONCRETE STRUCTURES					
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PLAN

NOTES:

- 1. ASSEMBLY SHALL BE MAINTAINED BY OWNER, TESTING IS REQUIRED BY A CERTIFIED BACKFLOW ASSEMBLY TESTER (BAT) AFTER INSTALLATION, THEN ANNUALLY THEREAFTER. A COPY OF THE TEST REPORT SHALL BE SENT TO THE CITY OF WENATCHEE.
- 2. WATER MAIN SHALL NOT BE PLACED IN SERVICE UNTIL AFTER REDUCED PRESSURE BACKFLOW ASSEMBLY IS INSPECTED AND APPROVED BY THE CITY OF WENATCHEE.
- 3. RESTRAIN ASSEMBLY WITH, MEGA-LUGS, RESTRAINED JOINT PIPE OR SHACKLE RODS BACK TO WATER MAIN AS REQUIRED.
- 4. SEE CURRENT ADDTION OF AWWA CROSS CONNECTION CONTROL MANUAL FOR ADDITIONAL DETAILS.



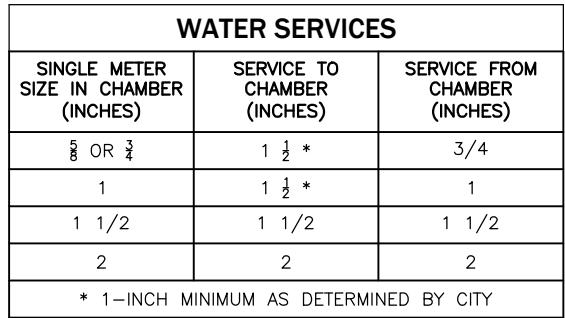
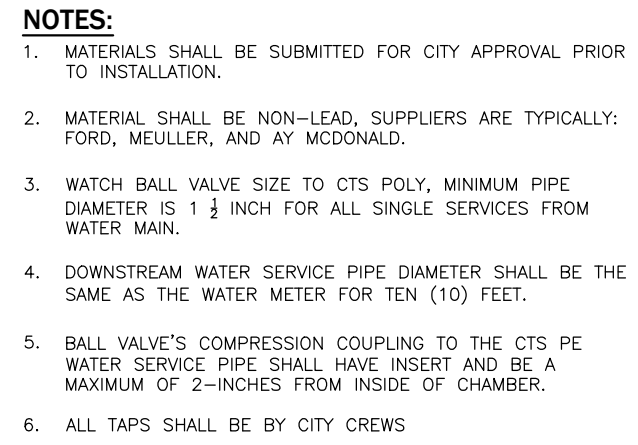
REDUCED PRESSURE
BACKFLOW ASSEMBLIES
RPBA's & RDDA's

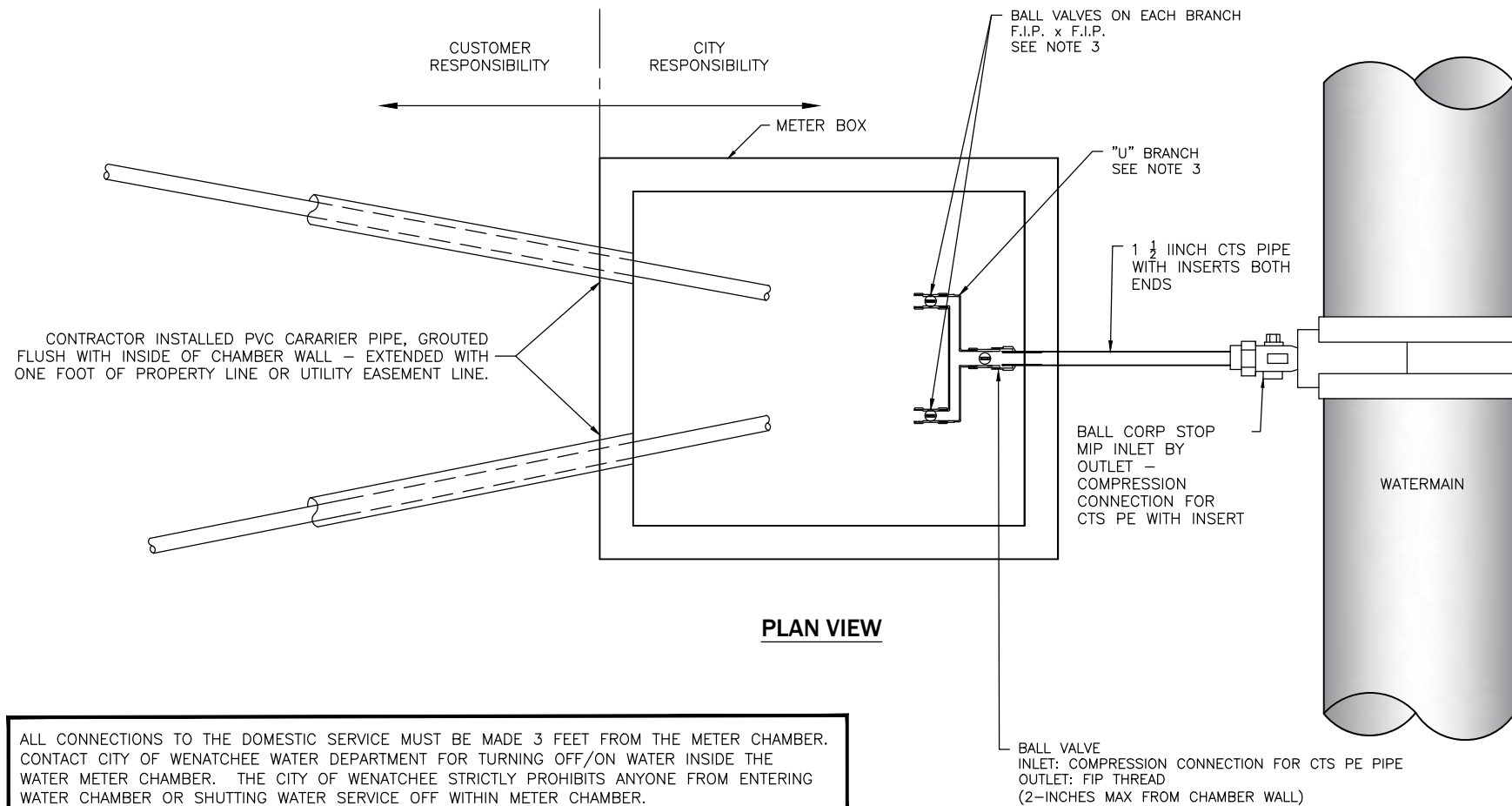
STANDARD DETAIL
HOT BOX ENCLOSURE
BACK FLOW ASSEMBLY



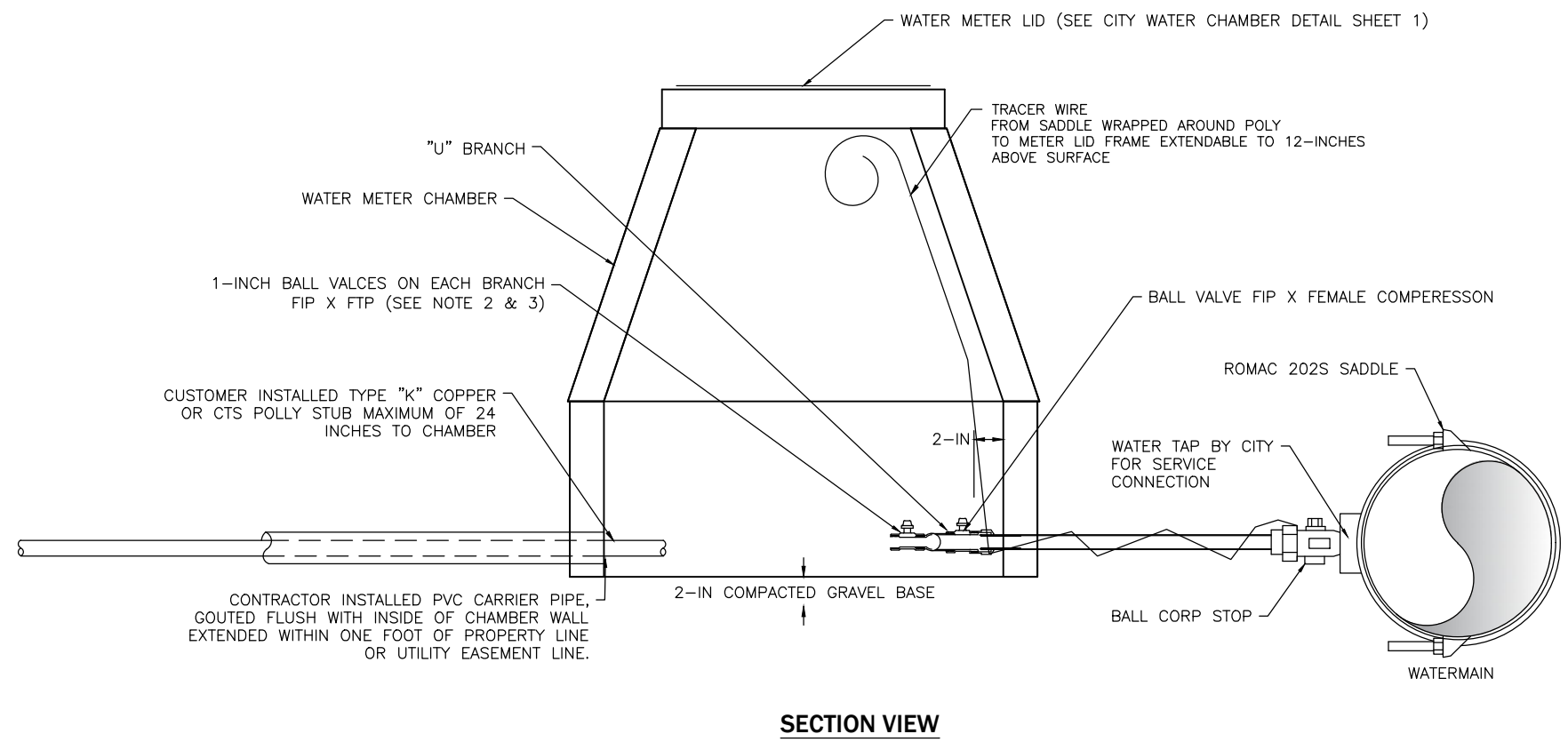
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				01/22	AJS	
APPROVED BY		DATE APPROVED				
STANDARD SPECIFICATIONS						

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- NOTES:**
1. MATERIALS SHALL BE SUBMITTED FOR CITY APPROVAL PRIOR TO INSTALLATION.
 2. MATERIAL SHALL BE NON-LEAD, SUPPLIERS ARE TYPICALLY: FORD, MEULLER, AND AY MCDONALD.
 3. MATCH BALL VALVE SIZE TO CTS POLY, 1-1/2 INCH BY 1-INCH U-BRANCH SET 12-INCH ON CENTER CONNECTED TO 1 1/2 INCH BALL VALVE NEAR CHAMBER WALL AND WITH 1-INCH BALL VALVES ON EACH BRANCH.
 4. DOWNSTREAM WATER SERVICE PIPE DIAMETER SHALL BE THE SAME AS THE WATER METER FOR TEN (10) FEET.
 5. 1 1/2 INCH BALL VALVE COMPRESSION COUPLING TO THE CTS PE SERVICE PIPE SHALL BE A MAXIMUM OF 2-INCHES FROM SIDE OF CHAMBER WALL.
 6. ALL TAPS SHALL BE BY CITY CREWS



STANDARD DETAIL

2 1" SPLIT FROM 1 1/2" DOUBLE METER SERVICE

WATER METER SERVICES

SCALE: AS SHOWN		DATE DRAWN		DATE		REVISIONS	
DESIGNED	DRAWN	3/06/2017	CHECKED	DATE	INITIAL	DATE	INITIAL
	MYW		DMN	04/26/2017	DMN	01/01/2022	AJS
APPROVED BY							

STANDARD SPECIFICATIONS

7-09 WATER MAINS

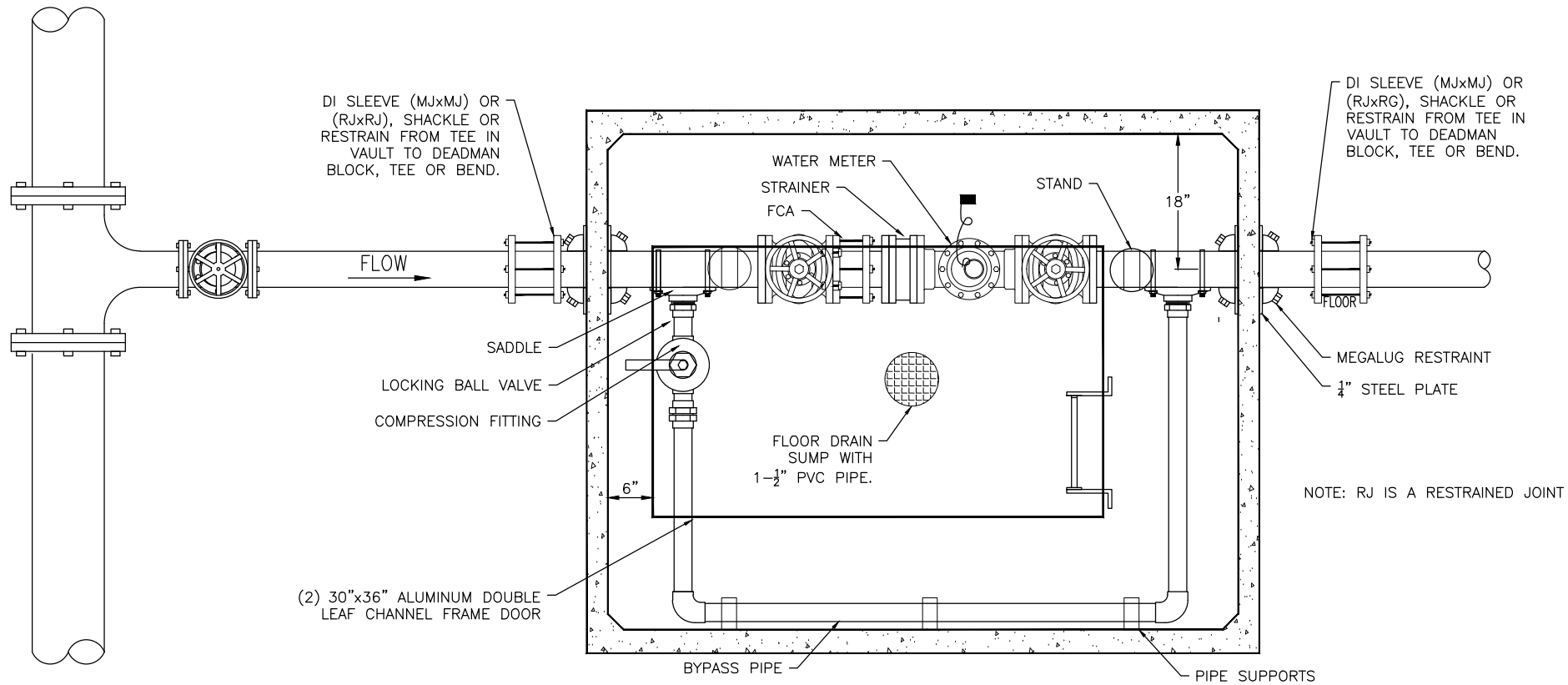
9-30.6 WATER SERVICE CONNECTIONS

DETAIL NO.

W-250C

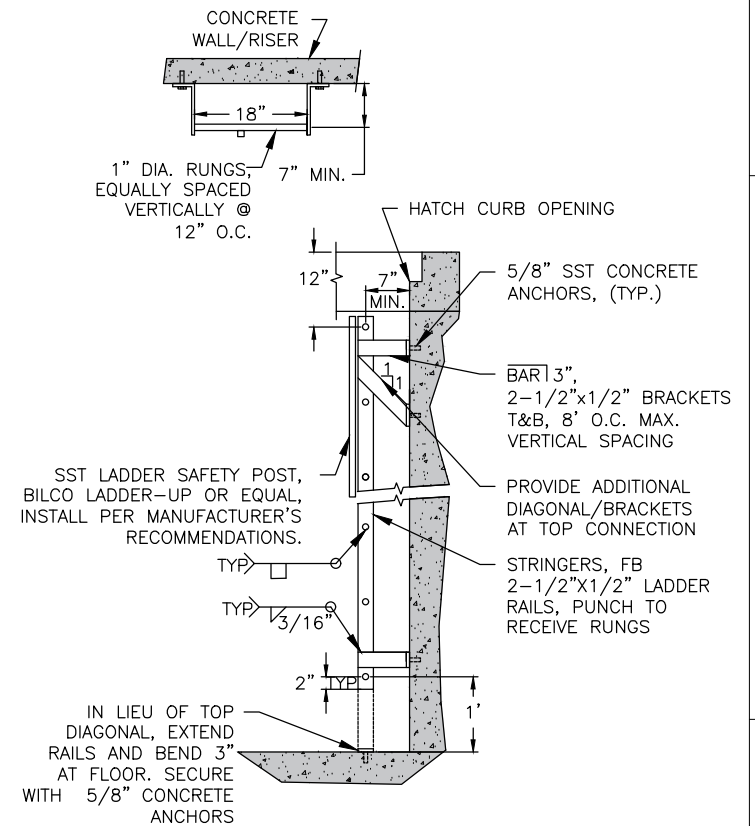
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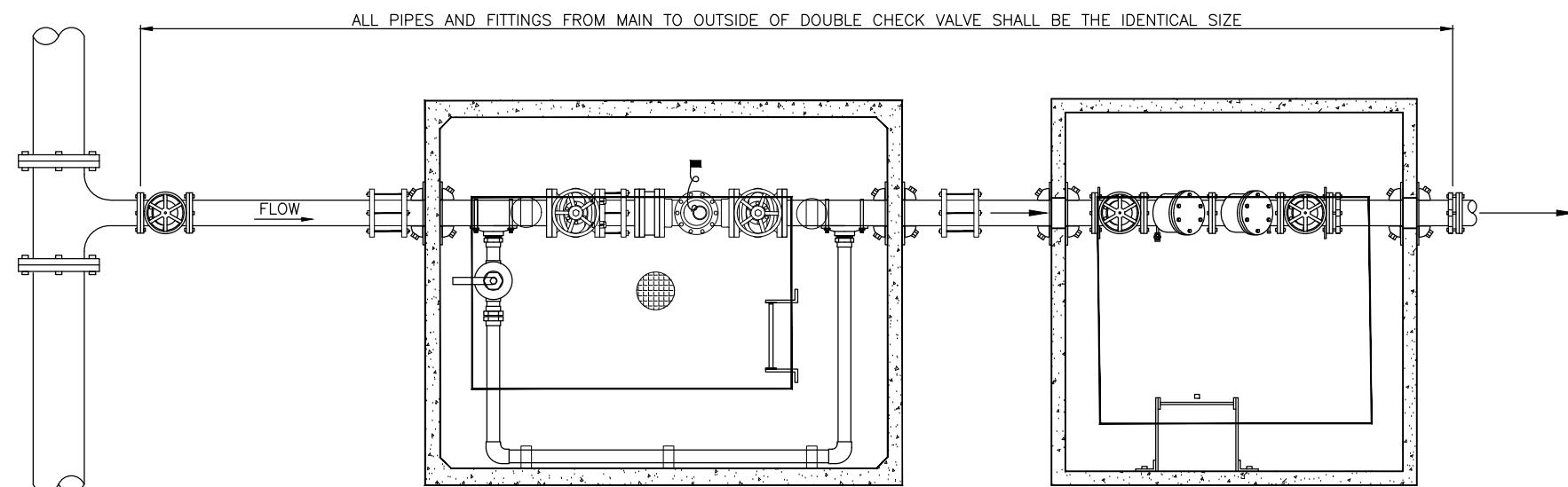


WATER PIPING AND VAULT
N.T.S.

- NOTES:**
1. LADDERS SHALL BE ALUMINUM.
 2. LADDER MUST MEET CONSTRUCTION REQUIREMENTS OF ANSI A14.3



LADDER DETAIL
N.T.S.



WATER PIPING AND VAULT
N.T.S.

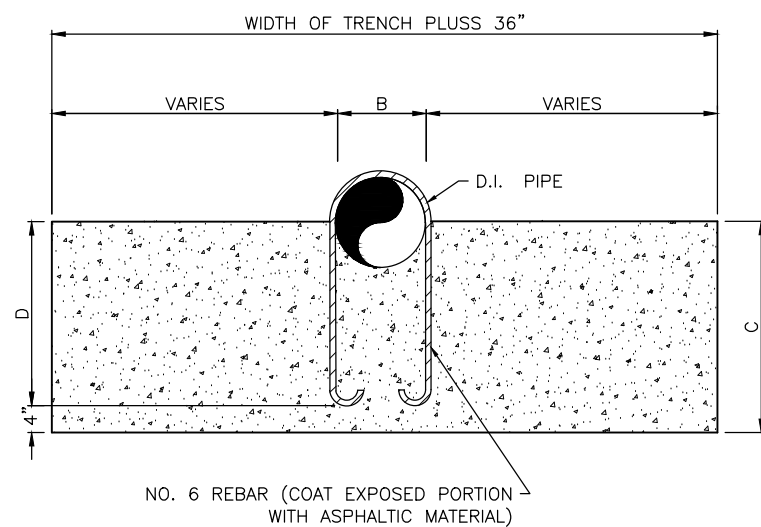
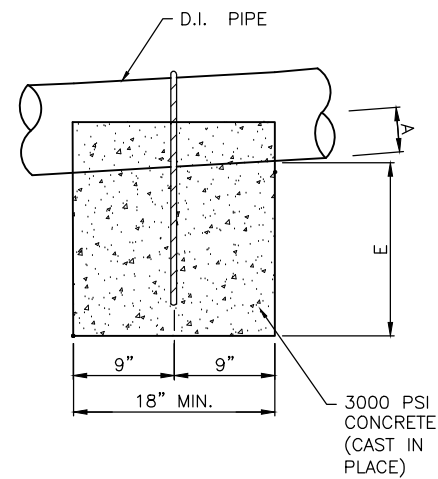
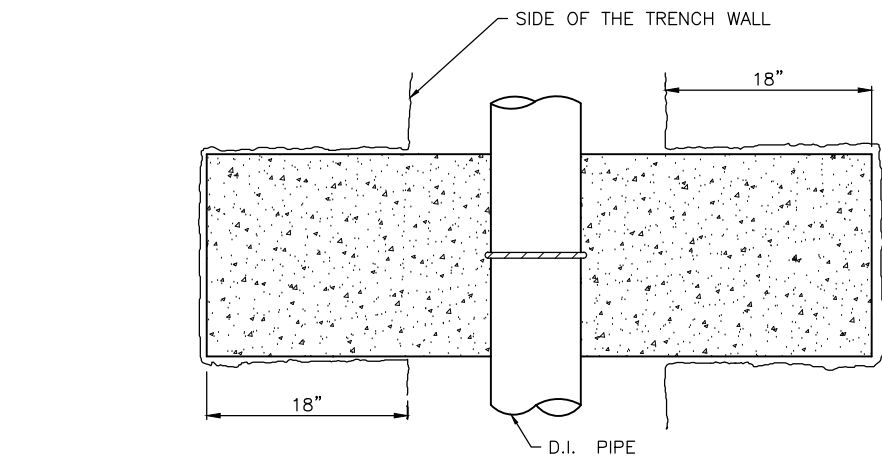
DOUBLE CHECK VAULT
N.T.S.

- NOTES:**
1. MATERIALS SHALL BE SUBMITTED FOR CITY APPROVAL PRIOR TO INSTALLATION.
 2. MATERIALS SHALL BE NON-LEAD.
 3. MATCH BALL VALVE SIZE TO CTS POLY.
 4. BALL VALVE COMPRESSION COUPLING TO THE CTS PE WATER SERVICE PIPE SHALL HAVE INSERT AND BE A MAXIMUM OF 2 INCHES FROM INSIDE CHAMBER WALL.
 5. DOWNSTREAM WATER SERVICE PIPE DIAMETER SHALL BE THE SAME AS THE WATER METER FOR 3 FEET.
 6. ALL TAPS SHALL BE BY CITY CREWS.
 7. WATER METER TO BE LOCATED AT BACK OF WALK. SET WATER METER CHAMBER LID FLUSH WITH FINAL SIDEWALK GRADE.
 8. EASEMENTS REQUIRED WHEN OUTSIDE RIGHT-OF-WAY.

STANDARD DETAIL
3" , 4" , AND 6" WATER
METER CHAMBER



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PIPE SIZE	DIMENSIONS (INCHES)				
	A	B	C	D	E
4"	2.4	4.8	17	13	14.6
6"	3.5	6.9	18	14	14.5
8"	4.5	9.1	19	15	14.5
10"	5.6	11.1	20	16	14.4
12"	6.6	13.2	21	17	14.4
14"	7.7	15.3	22	18	14.3
16"	8.7	17.4	23	19	14.3
18"	9.8	19.5	24	20	14.2

SLOPES > 20% – PROVIDE CONCRETE SLOPE ANCHORS (20’ TO 25’ ON CENTER.)

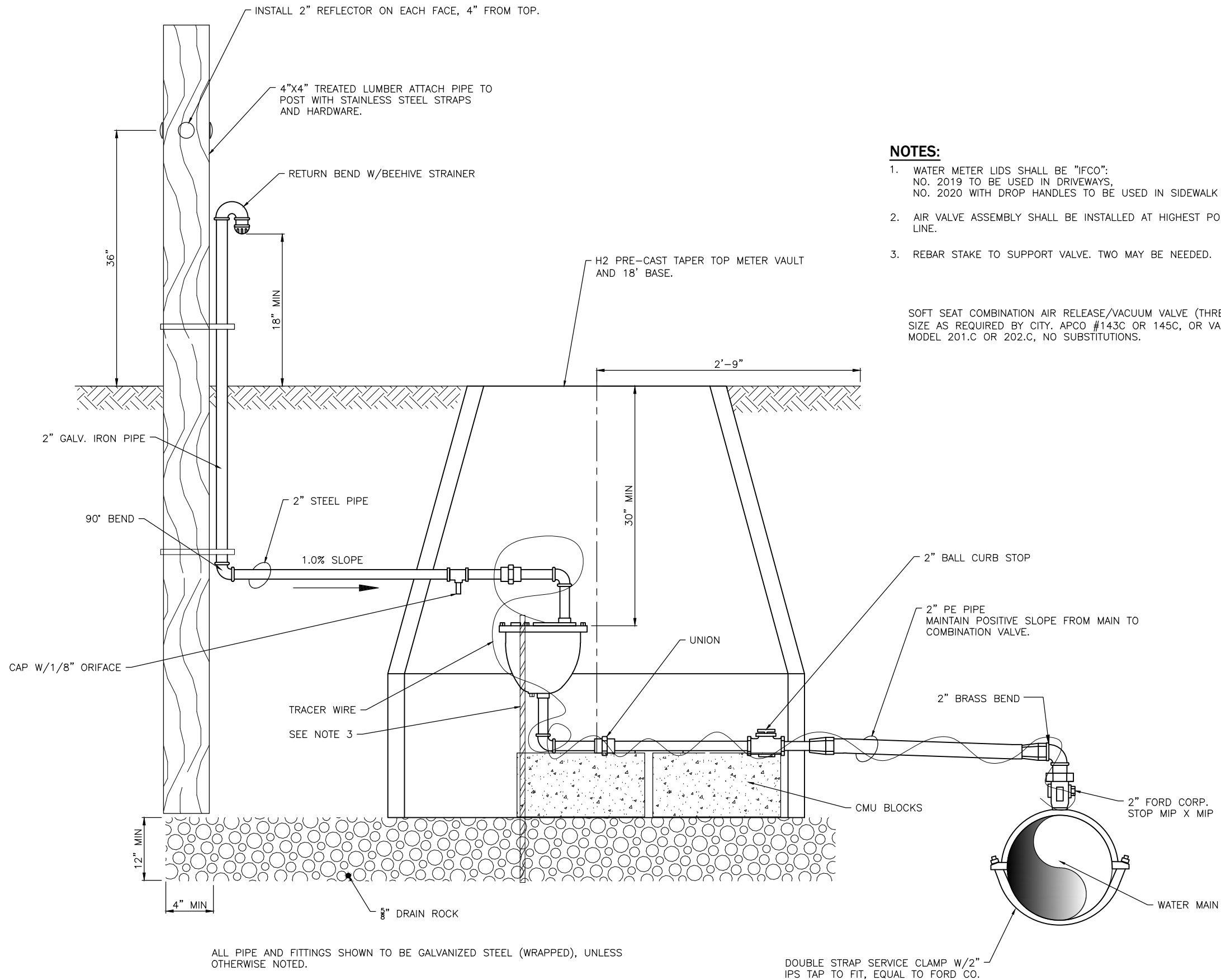
STANDARD DETAIL
CONCRETE SLOPE
ANCHOR



SCALE: AS SHOWN	DATE DRAWN 11/04/2020	REVISIONS		DATE	INITIAL
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NOTES:

1. WATER METER LIDS SHALL BE "IFCO": NO. 2019 TO BE USED IN DRIVEWAYS, NO. 2020 WITH DROP HANDLES TO BE USED IN SIDEWALK AREAS
2. AIR VALVE ASSEMBLY SHALL BE INSTALLED AT HIGHEST POINT OF LINE.
3. REBAR STAKE TO SUPPORT VALVE. TWO MAY BE NEEDED.

SOFT SEAT COMBINATION AIR RELEASE/VACUUM VALVE (THREADED), SIZE AS REQUIRED BY CITY, APCO #143C OR 145C, OR VAL-MATIC MODEL 201.C OR 202.C, NO SUBSTITUTIONS.

COMBINATION AIR VALVE N.T.S.

STANDARD DETAIL COMBINATION AIR VALVE



SCALE: AS SHOWN	DESIGNED	DRAWN	CHECKED	DATE	REVISIONS			
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